Index of Authors

	PAGES
Agutter, P. S.	91–97
Akamatsu, N.	905–911
Alhonen-Hongisto, L.	491–501
Allan, D.	881–887
Amatruda, J. M.	839–845
Amirrasooli, H.	393–400, 401–407
Ashby, P.	185–192, 193–199
Bachrach, U.	263–267, 387–392
Baker, R. R.	153–161
Ballard, F. J.	895–903
Barber, R.	169–174
Barbiroli, B.	553–556
Barrett, E. J.	569–572
Bauman, D. E.	565–568
Baumrucker, C. R.	565–568
Baverel, G.	873–880
Beecher, G. R.	255–262
Bell, P. A.	237–245
Bendall, D. S.	351–361
Bertrand, H.	141–144
Billingham, M. E. J.	823–837
Billington, D.	321–327
Bolla, R.	55–60
Bonkowsky, H. L.	289–295
Bontemps, F.	913–920
Booth, F. W.	247–254
Booth, I. R.	467–473
Boveris, A.	31–37, 577–583, 643–648
Bovina, C.	553–556
Branca, D.	945–948
Brand, M. D.	113–118
Brass, E. P.	451–458
Brocks, D. G.	207–212
Brooker, J. D.	781–788
Brown, C. R.	667–676
Brown, H. L. G.	119–130
Brown, J. H.	221–228
Butcher, R. W.	169–174
Bygrave, F. L.	443–450
Cadenas, E.	31–37, 577–583
Cain, K.	285–288
Carell, E. F.	573–576
Caro, J. F.	839–845
Cech, J. M.	839–845
Cha, C.-J. M.	557–560
Chance, B.	577–583
Chang, H.-Y.	153–161
Charles, S. A.	775–779
Chen, C.-P.	247–254
Clark, D. G.	99–106
Clark, J. B.	163–168
Cockcroft, S.	789–798
Coghill, D. R.	475–479
Coleman, R.	321–327
Cox, R. A.	509–519
Crawford, A.	393–400, 401–407
Cress, A. E.	375–380
Cunningham, C. C.	817–822
Curtis, C. G.	561–564
Dalrymple, P. N.	941–944
Daniels, R. S.	279–283
Dawson, A. P.	749–755
De Matteis, F.	145–152
Denckla, W. D.	55–60
Doberska, C. A.	137–140
Docampo, R.	643–648
Dohm, G. L.	255–262
Duckworth, G.	677–682
Dumont, J. E.	169–174
Edward, M.	769–773
Edwards, M. J.	677–682
Eichner, R. D.	221–228
Elliott, W. H.	781–788
England, P. J.	763–768
Erny, R.	289–295
Estrela, J. M.	549–552
Evans, C. E.	321–327
Exton, J. H.	443–450
Eyre, D. R.	823–837
Faber, J.	263–267
Fain, J. N.	593–599
Ferguson, S. J.	945–948
Fitin, A. F.	807–815
Fleischer, S.	47–54
Forissier, M.	873–880
Formiggini, G.	553–556
Freeman, R. B., Jr.	839–845
Fulton, D. V.	749–755
Galjaard, H.	337–343
Genchev, D. D.	75–83, 85–90
Genoux, C.	873–880
Gerner, E. W.	375–380
Gibbs, A. H.	145–152
Gietzen, K.	47–54
Gilman, H. R.	593–599
Godfrey, P. P.	321–327
Goldberg, A. L.	213–220
Golden, S.	799–805
Goldsby, R. A.	925–928
Goldstein, L.	557–560
Gomperts, B. D.	789–798
Gougoux, A.	741–748
Gram, T. E.	889–893
Green, C.	131–135
Grigor, M. R.	61–65
Guerri, C.	549–552
Hadjiolov, A. A.	85–90
Halbreich, A.	633–641
Halliwell, B.	775–779
Hamilton, W. A.	467–473
Hansen, L. J.	921–924
Harford, J. B.	481–490
Hassinen, I. E.	725–729
Hazelton, G. A.	25–30
Headon, D. R.	569–572
Healey, J. F.	289–295
Hers, H.-G.	913–920
Hesch, R.-D.	649–656
Hider, R. C.	541–548
Hiltunen, J. K.	725–729
Hipkiss, A. R.	279–283
Hockin, L. J.	937–939
Holland, R.	17–24
Hollenberg, P. F.	731–740
Honnor, R. C.	757–761
Hoppel, C. L.	451–458, 509–519, 521–527, 529–534
Houston, L. L.	941–944
Hume, R.	475–479
Husby, P.	459–465
Ida, M.	535–540
Illingworth, J.	297–311
Jackowski, G.	363–373
Jänne, J.	491–501
Jeacocke, S. A.	763–768
Johnson, S.	393–400
Johnson, V. G.	925–928
Johnston, J. D.	475–479
Jones, J. G.	561–564
Jones, R.	667–676
Jones, R. W.	345–350
Jones, T. R.	237–245
Kapp, R.	247–254
Kasperek, G. J.	255–262
Katz, J.	799–805
Kauppinen, R. A.	725–729
Kennedy, E. L.	137–140
Kentish, P.	107–112
Kermekchiev, M. B.	85–90
Kidwell, W. R.	437–441
Knowles, S. E.	895–903
Koller, M.-E.	329–335
Kuhn, N. J.	503–507
Kumar, A.	229–235
Lang, C. A.	25–30
Lefort, E.	169–174
Lemieux, G.	741–748
Libby, P.	213–220
Liew, C.-C.	363–373
Limas, C. J.	67–73
Limbrick, A. R.	881–887

	PAGES
Lippman, M. E.	437–441
Little, C.	39–46
Livesey, G.	705–713, 895–903
Long, W. F.	769–773
Longenecker, J. P.	847–857, 859–865
Lowther, D. A.	119–130
Lund, P.	705–713
MacNeil, S.	393–400, 401–407
Mager, J.	633–641
Malbon, C. C.	593–599
Malt, R. A.	229–235
Malthus, R.	99–106
Marchetti, M.	553–556
Martin, B. R.	137–140
Martin, L.	867–872
Martino, E. E.	643–648
Mather, I. H.	925–928
May, B. K.	781–788
Mayer, S.	221–228
McCormack, W.	541–548
McDevitt, C. A.	823–837
McIlroy, P. J.	423–435
McKay, M. J.	279–283
McNamara, J. P.	565–568
Medina, G.	297–311
Melvin, W. T.	229–235
Menashe, M.	263–267
Miller, J. K.	55–60
Mimnaugh, E. G.	889–893
Minkov, I. B.	807–815
Mohr, H.	649–656
Monaco, M. E.	437–441
Morrison, A.	609–618
Muir, H.	823–837
Myer, Y. P.	289–295
Nace, C. S.	925–928
Nicholls, D. G.	113–118
Novak, R. F.	509–519, 521–527
Nuutinen, E. M.	725–729
Obrebska, M. J.	107–112
Okamoto, Y.	905–911
Oliver, I. T.	929–932
Ollis, C.	393–400
Östenson, C.-G.	201–206
Paine, A. J.	937–939
Parce, J. W.	817–822
Parke, D. V.	107–112, 867–872
Parker, M. G.	667–676
Parkin, S. M.	193–199
Patel, T. B.	163–168
Peeters, C.	141–144
Pellet, M.	873–880
Peuhkurinen, K. J.	725–729
Pocius, P. A.	565–568
Pollock, A.	393–400
Porteous, J. W.	609–618, 619–632
Pösö, H.	491–501
Powell, G. M.	561–564
Powell, J. T.	1–8
Pretorius, P. J.	689–694
Prpić, V.	443–450
Qureshi, S. A.	921–924
Randle, P. J.	409–421
Rannels, D. E.	269–278
Reddy, J. K.	731–740, 921–924
Reddy, M. K.	731–740, 921–924
Rees, A. R.	9–16
Reinecke, C. J.	689–694
Richert, N. D.	423–435
Riches, D. W. H.	933–936
Říčný, J.	683–688
Robinson, D. S.	185–192, 193–199
Romero, F. J.	549–552
Romslo, I.	329–335, 459–465
Rosenberg, H.	715–723
Roughan, P. G.	17–24
Rumsby, M. G.	39–46
Russell, L. M.	715–723
Russell, N. J.	585–592
Ryan, N. M.	569–572
Ryan, R. J.	423–435
Sachan, D. S.	529–534
Saggerson, E. D.	757–761
Sale, G. J.	409–421
Sandercock, S. P.	585–592
Sandy, J. D.	119–130
Savage, C. R., Jr.	175–184
Schröck, H.	557–560
Seeger, J. W., Jr.	573–576
Seider, M. J.	247–254
Seiler, S.	47–54
Shukla, S. D.	131–135
Siddik, Z. G.	889–893
Sies, H.	643–648
Siess, E. A.	207–212
Sinclair, P. R.	289–295
Sinnott, M. L.	337–343
Skilleter, D. N.	285–288
Skriver, L.	695–704
Slack, C. R.	17–24
Smith, C. M.	175–184
Smith, P. J.	337–343
Sneyd, J. G. T.	99–106
Sorgato, M. C.	945–948
Spach, P. I.	817–822
Srivastava, G.	781–788
Stanworth, D. R.	933–936
Stein, J. M.	137–140
Stewart, A. C.	351–361
Stoppani, A. O. M.	643–648
Strange, R. C.	475–479
Swift, T. J.	521–527
Swillens, S.	169–174
Symons, A. M.	867–872
Tapscott, E. B.	255–262
Taylor, A. M. R.	677–682
Taylor, W. M.	443–450
Teng, C. S.	313–319
Teng, C. T.	313–319
Tephly, T. R.	145–152
Thomas, P.	881–887
Thompson, B.	221–228
Thorn, N. A.	657–666
Tolomelli, B.	553–556
Tomlinson, S.	393–400, 401–407
Tomoda, A.	535–540
Treiman, M.	657–666
Trush, M. A.	889–893
Tsuji, A.	535–540
Tuček, S.	683–688
Turner, J. M.	131–135
Turrens, J. F.	643–648
Utter, M. F.	601–608
Van den Berghe, G.	913–920
Vanderleyden, J.	141–144
Van Diggelen, O. P.	337–343
Vasilyeva, E. A.	807–815
Verachtert, H.	141–144
Villa, P.	937–939
Viña, J.	549–552
Vinay, P.	741–748
Vinogradov, A. D.	807–815
Von Glós, K. I.	667–676
Wade, A.	867–872
Waechter, C. J.	481–490
Walker, K.	193–199
Wallace, K. H.	9–16
Warren, S. M.	61–65
Watford, M.	741–748
Watkins, C. A.	269–278
Watson, H. H. K.	769–773
Watts, C.	99–106
Weinberg, M. B.	601–608
Weisenberg, E.	633–641
White, A.	503–507
Whitney, P. L.	1–8
Wieland, O. H.	207–212
Williams, J. F.	847–857, 859–865
Williams, K. E.	895–903
Williams, N. E.	695–704
Williamson, F. B.	769–773
Wolf, H. U.	47–54
Worm-Petersen, S.	657–666
Yeoh, G. C. T.	929–932
Yoneyama, Y.	535–540
Yu, F.-L.	381–385

Index of Subjects

Acetaldehyde
  hepatocyte glutathione 549–552
4-Acetamido-4′-isothiocyanatostilbene-2,2′-disulphonic acid ('SITS')
  heart phosphate transport 297–311
Acetate
  Lipid biosynthesis in spinach leaves 17–24
  vasopressin and lipid synthesis 437–441
Acetoacetate
  brain lipogenesis 163–168
  mitochondrial Ca^{2+} efflux 113–118
  nicotinamide nucleotide oxidation 113–118
N-Acetylaspartate
  brain lipogenesis 163–168
  brain mitochondrial membrane transport 163–165
Acetylcarnitine
  mitochondrial palmitoylcarnitine metabolism 451–458
Acetylcholine
  acetyl-CoA and choline 683–688
  brain caudate nuclei 683–688
  control of synthesis 683–688
Acetylcholinesterase
  developing lung 1–8
  erythrocyte membranes and vesicles 881–887
Acetyl-coenzyme A
  brain caudate nuclei 683–688
  choline and acetylcholine 683–688
N-Acetylneuraminic acid
  regenerating liver 905–911
N-Acetylputrescine
  lymphocytes 263–267
N^1-Acetylspermidine
  lymphocytes 263–267
Acidosis
  glutamine in hindlimb and kidney 557–560
  heart phosphate transport 297–311
N-Acylglucosamines
  Golgi-membrane galactosyltransferase 503–507
N-Acyl-D-mannosamine kinase
  regenerating liver 905–911
N-Acylneuraminate 9-phosphate synthase
  regenerating liver 905–911
Adenine nucleotides
  chick intestinal cells 619–632
  coformycin and hepatocyte metabolism 913–920
  mitochondrial deterioration 817–822
  phenylephrine and mitochondria 443–450
  subcellular distribution in hepatocytes 207–212
  weak bases and yolk sacs 895–903
Adenosine 3′:5′-cyclic monophosphate
  accumulation and thyroid status 593–599
  α- and β-adrenergic agents 593–599
  glycogen phosphorylase 593–599
  hormone-stimulated accumulation 593–599
  hormone-stimulus transmission 169–174
  metabolism 169–174
  regulation of CoA biosynthesis 175–184
Adenosine deaminase
  coformycin 913–920
  glucagon 749–755
  lipolysis in adipocytes 749–755
  liver 913–920
Adenosine diphosphate
  interaction with ATPase 807–815
  RNA release from nuclei 91–97
Adenosine 5′-monophosphate
  coformycin and hepatocyte catabolism 913–920
Adenosine triphosphatase
  basal and Ca^{2+}-dependent 569–572
  (Ca^{2+} + Mg^{2+})-dependent 47–54
  erythrocyte Ca^{2+}-transport system 47–54
  interaction with ADP and ATP 807–815
  mitochondrial deterioration 817–822
  ox heart submitochondrial particles 807–815
  skeletal-muscle microsomal 569–572
Adenosine triphosphate
  blood concentration on storage 39–46
  copper and iron deficiency 633–641
  cut or stretched skeletal muscle 247–254
  interaction with ATPase 807–815
  ribonucleotide reductase in *Euglena gracilis* 573–576
  RNA release from nuclei 91–97
  synthesis and protonmotive force 945–948
  synthesis in submitochondrial particles 945–948
Adenosine triphosphate (ATP^{4-})
  histamine secretion 789–798
  mast cells 789–798
  phosphatidylinositol labelling 789–798
  receptor 789–798
S-Adenosylmethionine decarboxylase
  diguanidine inhibitors 491–501
  polyamine metabolism 385–392
Adenylate cyclase
  fluoride activation and dissociation 137–140
  hormone-induced desensitization 169–174
  hormone-responsive 393–400, 401–407
  irradiation inactivation 137–140
  kidney cortex 649–656
  liver and ovary 423–435
  parathyrin 649–656
  plasma membranes 137–140
  proteinase inhibitors 423–435
  stimulation factor in cytosol 393–400, 401–407
Adenylate deaminase
  coformycin 913–920
  liver 913–920
Adipocytes
  glucagon and adenosine deaminase 757–761
  lipolysis 757–761
Adipose tissue
  glucagon, adenosine deaminase and lipolysis 757–761
  glycogen synthase 221–228
  lipoprotein lipase 185–192, 193–199
  phosphoprotein phosphatase 221–228
  protein synthesis 193–199
Adrenaline
  lipoprotein lipase 185–192
  mitochondrial Ca^{2+} fluxes 443–450

Adrenaline—*cont.*
myosin light-chain phosphorylation 763–768
α-Adrenergic agonists
mitochondrial Ca^{2+} fluxes 443–450
α- and β-Adrenergic agents
hepatocyte glycogen phosphorylase and cyclic AMP 593–599
Aging
aberrant protein degradation in reticulocytes 279–283
mitochondrial deterioration 817–822
mouse tissue contents of glutathione 25–30
reducing potential of tissues 25–30
RNA-synthesis initiation in rat liver nuclei 55–60
Alanine
chick intestinal cells 619–632
kidney-cortex glutamine metabolism 873–880
Alcohol dehydrogenase
hepatocyte glutathione depletion 549–552
Alga
blue–green, thermophilic, *see* Thermophilic blue–green alga
Alkaline phosphatase
membrane release by bile salts 321–327
Alkaline phosphodiesterase
membrane release by bile salts 321–327
Alkalosis
heart phosphate transport 297–311
Allantoin
hepatocyte production and coformycin 913–920
Alloxan
glucagon release 201–206
glucose oxidation 201–206
pancreatic A_2-cells 201–206
Alloxan-diabetes
heart mitochondrial pyruvate dehydrogenase 409–421
2-Allyl-2-isopropylacetamide
δ-aminolaevulinate synthase induction 781–788
hepatic porphyria 781–788
liver haem metabolism 289–295
Alternative oxidase
mitochondria 141–144
Neurospora crassa 141–144
nucleoside phosphates 141–144
Amines
primary, *see* Primary amines
Amino acid composition
cartilage type-II collagen 823–837
epididymal proteins 667–676
Amino acid pools
lung protein synthesis 269–278
Amino acids
artificial transport across organic phases 541–548
branched-chain, *see* Branched-chain amino acids
erythrocyte membrane transport 541–548
facilitated transport 541–548
metabolism in intestinal brush-border cells 619–632
small-scale assay 799–805
γ-Aminobutyrate
asparagine and polyamine metabolism 385–392
Aminoethyl-L-cysteine
reticulocyte degradation of protein containing 279–283
α-Aminoisobutyrate
insulin and hepatocyte uptake 839–845
δ-Aminolaevulinate
green porphyrin protohaem ferro-lyase inhibitor 145–152
δ-Aminolaevulinate synthase
2-allyl-2-isopropylacetamide 781–788
deferoxamine methanesulphonate 781–788
haemin 781–788
Ammonia
kidney-cortex glutamate metabolism 873–880
Ammonium ions
endocytosis and proteolysis 895–903
Amylase
pancreatic-carcinoma secretion granules 921–924
Androgens
epididymal protein synthesis 667–676
Angiotensin-converting enzyme
developing lung 1–8
Antibodies (monoclonal)
milk-fat-globule-membrane proteins 925–928
tumours 925–928
xanthine oxidase 925–928
Antimycin
mitochondrial H_2O_2 production 31–37
Arachidonate
nerve-cell-body lipids 153–161
Articular cartilage
collagen biosynthesis 823–837
experimental osteoarthrosis 823–837
matrix-protein biosynthesis 823–837
proteoglycan biosynthesis in culture 119–130
Ascites-tumour cells
Ehrlich, *see* Ehrlich ascites-tumour cells
Asparagine
metabolism in intestinal brush-border cells 619–632
polyamine metabolism 385–392
Aspartate
metabolism in intestinal brush-border cells 619–632
subcellular distribution in hepatocytes 207–212
Ataxia telangiectasia
DNA-repair enzymes 677–682
fibroblasts and lymphoid cells 677–682
ATP citrate lyase
brain lipogenesis 163–168

Bacillus subtilis
purification of leucine dehydrogenase 705–713
Bacteria
psychrophilic, *see* Psychrophilic bacteria
Basal-lateral membrane
parathyrin binding and fragmentation 649–656
parathyrin-stimulated adenylate cyclase 649–656
preparation from kidney cortex 649–656
Bathophenanthroline sulphonate
amino acid-transport inhibition 541–548
Bile
excretion kinetics 561–564
hepatocyte membranes 321–327
Bile salts
plasma-membrane enzymes 321–327
rat hepatocytes 321–327
Biphenyl 4-hydroxylase
carbon disulphide 107–112

Biphenyl-4-ylacetic acid
4-ethynylbiphenyl metabolism 867–872
Bis(salicylamidato)copper(II) complexes
facilitated amino acid transport 541–548
Blood
erythrocyte changes on storage 39–46
Blue–green alga
thermophilic, *see* Thermophilic blue–green alga
Bone cells
cytosol factor stimulating adenylate cyclase 393–400, 401–407
Brain
acetyl-CoA, acetylcholine and choline 683–688
dolichyl phosphate mannose synthase development 481–490
lipogenesis in suckling rats 163–168
nerve-cell-body membrane phospholipids 153–161
Branched-chain amino acids
enzymic determination in rat tissues 705–713
2-oxo acids 705–713
Branched-chain 2-oxo acids
enzymic determination in rat tissues 705–713
transfer from skeletal muscle to liver 705–713
Bromodeoxyuridine
hepatocyte differentiation 929–932
tyrosine aminotransferase 929–932
Bromosulphophthalein
biliary excretion 561–564
Brush-border cells
metabolism 619–632
preparation 619–632
Brush-border membrane
immunoglobulin-G Fc-fragment receptor 9–16
parathyrin binding and fragmentation 649–656
parathyrin-stimulated adenylate cyclase 649–656
preparation from kidney cortex 649–656
preparation from neonatal-rat small intestine 9–16

Cadmium
metallothionein synthesis 285–288
uptake by liver parenchymal cells 285–288
Cadmium-binding protein
liver parenchymal cells 285–288
Caecal contents
4-ethynylbiphenyl metabolism 867–872
Calcium ion transport
reconstitution in human erythrocytes 47–54
solubilized ATPase in membranous vesicles 47–54
Calcium ions
acetoacetate 113–118
α-adrenergic agonist and glucagon 443–450
Calvin cycle 775–779
erythrocyte budding 881–887
fructose bisphosphatase 775–779
hepatocyte cyclic AMP and glycogen phosphorylase 593–599
kidney N^6-trimethyl-lysine hydroxylase 529–534
mast cells 789–798
mitochondrial efflux 113–118, 749–755
mitochondrial fluxes 443–450
mitochondrial H_2O_2 production 31–37
myosin light-chain phosphorylation 763–768
nicotinamide nucleotides 113–118
Nupercaine and Ruthenium Red 749–755
RNA release from nuclei 91–97
spinach chloroplasts 775–779
Calvin cycle
regulation by Ca^{2+} in spinach chloroplasts 775–779
Carbon disulphide
cytochrome *P*-450 107–112
mixed-function oxidases 107–112
Carbonic anhydrase
developing lung 1–8
Carbonyl cyanide *m*-chloromethoxyphenylhydrazone
mitochondrial H_2O_2 production 31–37
Carbonyl cyanide *p*-trifluoromethoxyphenylhydrazone
mitochondrial H_2O_2 production 31–37
Carcinoma
pancreas 921–924
Cardiac muscle
fractionation of ventricular nuclei 353–363
phosphate transport 297–311
protein breakdown 213–220
proteinase inhibitors 213–220
Carnitine
biosynthesis in kidney 509–519, 529–534
biosynthesis in liver 509–519
mitochondrial CoA 451–458
mitochondrial palmitoylcarnitine oxidation 451–458
N^6-trimethyl-lysine metabolism 509–519, 521–527, 529–534
Carnitine acyltransferase
carnitine and mitochondrial CoA 451–458
Cartilage
articular, *see* Articular cartilage
Catecholamines
hepatocyte glycogen phosphorylase and cyclic AMP 593–599
Cathepsin B
chymostatin inhibition in muscle 213–220
Cathepsin D
muscle and exercise 255–262
Cations
RNA release from nuclei 91–97
Caudate nuclei
acetyl-CoA, acetylcholine and choline 683–688
synthesis of acetylcholine 683–688
Cell cultures
cytosol factor stimulating adenylate cyclase 393–400, 401–407
Cell fractionation
digitonin and low temperature 207–212
Cell growth
ornithine decarboxylase 375–380
Cell organelles
biogenesis 695–704
Cell proliferation
glycosaminoglycans in regenerating liver 769–773
inhibition by diguanidines 491–501
Cells
A_{2^-}, pancreatic, *see* Pancreatic A_2-cells
brush-border, *see* Brush-border cells
Chinese-hamster ovary, *see* Chinese-hamster ovary cells
Ehrlich ascites-tumour, *see* Ehrlich ascites-tumour cells
glioma, *see* Glioma cells
liver parenchymal, *see* Liver parenchymal cells
lymphoid, *see* Lymphoid cells

Cells—*cont.*
mammary-tumour (WRK-1) 437–441
myocardial, *see* Myocardial cells
Cerebral cortex
nerve-cell-body membrane phospholipids 153–161
Chemiluminescence
cytochrome *c* 577–583
hydroperoxide 577–583
lipid vesicles 577–583
phospholipids 577–583
Chemiosmotic theory
ATP synthesis and protonmotive force 945–948
Chick intestinal cells
preparation 619–632
Chinese-hamster ovary cells
ornithine decarboxylase 375–380
Chloroplasts
Ca^{2+}-inhibition of fructose bisphosphatase 775–779
Ca^{2+}-regulation of Calvin cycle 775–779
polar-lipid synthesis 17–24
spinach leaves 17–24
Chloroquine
endocytosis and proteolysis 895–903
Cholesterol
release from skeletal-muscle microsomal fraction 569–572
[*carboxy*-^{14}C]Cholic acid
biliary excretion 561–564
Choline
acetylcholine and acetyl-CoA 683–688
content in brain slices 683–688
Choline kinase
developing lung 1–8
Chondrocytes
proteoglycan loss and biosynthesis 119–130
Chondroitin sulphate
linkage region in cartilage proteoglycans 119–130
regenerating liver 769–773
Choriogonadotropin
adenylate cyclase stimulation 423–435
Chromatin
heart nuclear RNA synthesis 67–73
non-histone proteins, *see* Non-histone chromatin proteins
Chymostatin
Ca^{2+}-activated proteinase 213–220
cathepsin B inhibition 213–220
inhibition of muscle protein breakdown 213–220
lysosomes 213–220
proteinase inhibition 213–220
Cilia
proteins and membrane phospholipids 695–704
regeneration in *Tetrahymena thermophila* 695–704
Citrate
subcellular distribution in hepatocytes 207–212
Citrate translocase
brain lipogenesis 163–168
mitochondrial membrane 163–168
Cobalt deuteroporphyrin
mitochondrial efflux 459–465
Coenzyme A
biosynthesis from pantothenate 175–184
carnitine 451–458
dexamethasone 175–184
dibutyryl cyclic AMP 175–184
glucagon 175–184
glucocorticoids 175–184
mitochondria 451–458
Coformycin
hepatocyte purine catabolism 913–920
Collagen
biosynthesis in articular cartilage 823–837
experimental osteoarthrosis 823–837
Copper(II)
membrane amino acid transport 541–548
Copper deficiency
impaired energy metabolism 633–641
protein-synthesis inhibition 633–641
secondary iron deficiency 633–641
Crypt cells
nucleic acid synthesis 609–618
Cutting
skeletal-muscle protein turnover 247–254
Cyclic AMP, *see* Adenosine 3′:5′-cyclic monophosphate
Cycloheximide
regulation of CoA biosynthesis 175–184
Cytidine monophosphate
labelling in RNA 85–90
Cytochrome *c*
chemiluminescence 577–583
hydroperoxide 577–583
lipid vesicles 577–583
Cytochrome *P*-450
autoxidation 107–112
binding of pyridines 937–939
carbon disulphide 107–112
degradation to cytochrome *P*-420 107–112
maintenance by pyridines 937–939
maintenance in cultured hepatocytes 937–939
Cytochromes
blue–green alga 351–361
Cytosine arabinoside
hepatocyte mitosis 929–932
tyrosine aminotransferase 929–932
Cytosol
carbon transport from mitochondria 163–168
factor stimulating adenylate cyclase 393–400, 401–407
thymus glucocorticoid receptor 237–245
vitamin A and glutathione *S*-transferases 889–893

Deferoxamine methanesulphonate
δ-aminolaevulinate synthase 781–788
Deoxyribonucleic acid
ataxia telangiectasia 677–682
γ-irradiation-damage repair 677–682
release from nuclei 91–97
Deoxyribonucleic acid polymerase
enhancement by enzyme in fibroblasts and lymphoid cells 677–682
repair of γ-irradiation-damaged DNA 677–682
Deoxyribonucleic acid synthesis
intestinal-epithelial-cell differentiation 609–618
ornithine decarboxylase induction 375–380
Dermatan sulphate
regenerating liver 769–773
Desferrioxamine methanesulphonate, *see* Deferoxamine methanesulphonate

Development
brain dolichyl phosphate mannose synthase 481–490
human erythrocyte glutathione *S*-transferase 475–479
Dexamethasone
glucocorticoid antagonists and receptor binding 237–245
regulation of CoA biosynthesis 175–184
steroids and receptor binding 237–245
Diabetes
gluconeogenesis and pyruvate oxidation 601–608
hepatocyte insulin action and binding 839–845
pyruvate carboxylase turnover 601–608
pyruvate dehydrogenase turnover 601–608
streptozotocin-induced 601–608
Diacylgalactosylglycerol
biosynthesis in spinach 17–24
Diacylglycerol
metabolism in spinach 17–24
Diamine oxidase
polyamine metabolism 385–392
Dibutyryl cyclic AMP (6-*N*,2′-*O*-Dibutyryladenosine 3′:5′-cyclic monophosphate)
regulation of CoA biosynthesis 175–184
Diet
rat mammary lipogenesis 61–65
rat milk lipid composition 61–65
3,5-Diethoxycarbonyl-1,4-dihydrocollidine
protohaem ferro-lyase inhibitor 145–152
Differentiation
foetal hepatocytes 929–932
intestinal epithelial cells 609–618
nucleic acid synthesis 609–618
pancreatic carcinoma 921–924
Digitonin
fractionation of hepatocytes 207–212
metabolite compartmentation 207–212
Diguanidine derivatives
cell-prohferation inhibition 491–501
Dolichyl monophosphate
dolichyl phosphate mannose synthase 481–490
Dolichyl phosphate mannose synthase
development in brain 481–490
Drugs
hypolipidaemic, *see* Hypolipidaemic drugs

Ehrlich ascites-tumour cells
proliferation inhibition by diguanidines 491–501
pyrimidine nucleotides and RNA metabolism 75–83, 85–90
Elastin
developing lung 1–8
Electron transport
photosynthesis in *Phormidium* 351–361
Embryonic development
ornithine decarboxylase in chick ovary 313–319
Endocytosis
weak bases and protein degradation 895–903
Energy metabolism
copper and iron deficiency 633–641
Enzyme turnover
fibroblast lysosomes 337–343
Epididymis
adipose-tissue lipoprotein lipase 185–192, 193–199
androgen- and testicular fluid-dependent proteins 667–676
hormonal regulation of protein synthesis 667–676
Erwinia carotovara
inner and outer membranes 131–135
phosphatidylethanolamine 131–135
Erythrocyte membranes
amino acid transport 541–548
preparation by iso-osmotic freeze-haemolysis 47–54
Erythrocytes
changes when human blood is stored 39–46
glutathione *S*-transferase 475–479
human foetuses and adults 475–479
ionophore A23187-induced budding 881–887
lysis by phospholipase C 39–46
methaemoglobin reduction 535–540
'nanovesicles' 881–887
reconstituted Ca^{2+}-transport system 47–54
Erythropoietic protoporphyrin
liver mitochondrial porphyrins 329–335
Escherichia coli
energy-conserving oxidation of molecular H_2 345–350
K^+ and phosphate transport 715–723
membrane-bound hydrogenase 345–350
reduction of nitrate and fumarate 345–350
Escherichia coli ML 308–225
β-galactoside transport 459–465
proton-linked transport 459–465
Ethanol
hepatocyte glutathione 549–552
Ethynyl group
metabolism by liver and intestinal microflora 867–872
4-Ethynylbiphenyl
Ames mutagenicity test 867–872
metabolism 867–872
Euglena gracilis
ribonucleotide reductase 573–576
vitamin B_{12} 573–576
Excretion
biliary 561–564
Exercise
muscle protein turnover 255–262
Experimental porphyria
3,5-diethoxycarbonyl-1,4-dihydrocollidine 145–152
green modified porphyrin 145–152
haem 781–788
liver haem metabolism 289–295
protohaem ferro-lyase inhibitor 145–152

Fat
milk, *see* Milk lipids
Fat-bodies
lipoprotein lipase 185–192, 193–199
Fat-cells, *see* Adipocytes
Fatty acid synthetase
Micrococcus cryophilus 585–592
relationship to bacterial fatty acid elongase 585–592
Fatty acids
biosynthesis *de novo* and elongation in *Micrococcus cryophilus* 585–592
incorporation into phospholipids 153–161
medium-chain, *see* Medium-chain fatty acids

Fatty acids—*cont.*
mitochondrial oxidation 451–458
nerve-cell-body membranes 153–161
unsaturation and cytochrome *c* chemiluminescence 577–583
Fc fragment, *see* Immunoglobulin-G Fc fragment
Ferric citrate
liver haem metabolism 289–295
Ferrochelatase, *see* Protohaem ferro-lyase
Fibroblasts
ataxia telangiectasia 677–682
DNA-repair enzymes 677–682
lysosomal glycosidase inhibitors 337–343
Fibroblasts (WI-38)
prostaglandin E_1 and cyclic AMP 169–174
Fluoride ions
adenylate cyclase 137–140
plasma membranes 137–140
Foetus
differentiation and mitosis in hepatocytes 929–932
human erythrocyte glutathione *S*-transferase 475–479
Folate coenzymes
regenerating liver 553–556
Fructose
hepatocyte purine catabolism 913–920
Fructose bisphosphatase
Ca^{2+} inhibition 775–779
Calvin cycle 775–779
spinach chloroplasts 775–779
Fumarate reductase
Escherichia coli 345–350
Furosemide
heart phosphate transport 297–311

β-Galactosidase
release from macrophages 933–936
specific inhibition in fibroblast lysosomes 337–343
β-Galactoside permease
Escherichia coli 467–473
proton-linked transport 467–473
β-Galactosides
transport in *Escherichia coli* 459–465
Galactosyltransferase
glucose and *N*-acylglucosamines 503–507
Golgi membrane vesicles 503–507
lactating mammary gland 503–507
phlorrhizin and thiol reagents 503–507
Glioma cells
polyamine metabolism 387–392
Globin
mitochondrial metalloporphyrin efflux 459–465
Glucagon
adenosine deaminase 749–755
adenylate cyclase stimulation 423–435
alloxan 201–206
lipolysis in adipocytes 749–755
mitochondrial Ca^{2+} fluxes 443–450
regulation of CoA biosynthesis 175–184
release from pancreatic islets 201–206
Glucocorticord agonists and antagonists
glucocorticoid–receptor interactions 237–245
Glucocorticoid receptors
steroid effects on glucocorticoid binding 237–245
thymus cytosol 237–245
Glucocorticoids
interaction with receptors 237–245
lipoprotein lipase 185–192
regulation of CoA biosynthesis 175–184
Gluconeogenesis
pentose phosphate-cycle measurement 847–857, 859–865
pyruvate oxidation in diabetes 601–608
regulation in kidney 741–748
Glucosamine
sialic acid in regenerating liver 905–911
Glucose
adipose-tissue protein synthesis 193–199
alloxan 201–206
Golgi-membrane galactosyltransferase 503–507
kidney metabolism 741–748
kidney-cortex glutamate metabolism 873–880
labelling and pentose phosphate cycle 847–857, 859–865
lipoprotein lipase activation 193–199
metabolism in intestinal brush-border cells 619–632
oxidation in pancreatic islets 201–206
Glucose 6-phosphate
labelling and pentose phosphate cycle 847–857, 859–865
Glucose 6-phosphate dehydrogenase
developing lung 1–8
Glucose transport
Golgi membrane 503–507
β-Glucosidase
specific inhibition in fibroblast lysosomes 337–343
β-Glucuronidase
release from macrophages 933–936
Glutamate
glutamate dehydrogenase and glutamine synthesis 873–880
metabolism in intestinal brush-border cells 619–632
metabolism in kidney cortex 873–880
Glutamate dehydrogenase
kidney-cortex glutamate metabolism 873–880
Glutamine
acute acidosis 557–560
kidney metabolism 741–748
kidney-cortex glutamate metabolism 873–880
metabolism in intestinal brush-border cells 619–632
release from hindlimb 557–560
uptake by kidney 557–560
γ-Glutamyl transpeptidase
lactogenesis 565–568
mammary tissue 565–568
prolactin 565–568
Glutathione
acetaldehyde 549–552
assays 25–30
brush-border cells 619–632
ethanol 549–552
hepatocytes 549–552
H_2O_2 metabolism in *Trypanosoma cruzi* 643–648
protection by methionine in hepatocytes 549–552
tissue contents and mouse age 25–30

Glutathione peroxidase
H_2O_2 metabolism in *Trypanosoma cruzi* 643–648
Glutathione reductase
H_2O_2 metabolism in *Trypanosoma cruzi* 643–648
Glutathione *S*-transferase
human erythrocytes 475–479
liver, kidney and lung cytosols 889–893
vitamin A deficiency 889–883
Glycerol
nerve-cell-body lipids 153–161
Glycocholate
release of hepatocyte plasma-membrane enzymes 321–327
Glycodeoxycholate
release of hepatocyte plasma-membrane enzymes 321–327
Glycogen
neonatal-rat liver 99–106
starved-rat liver and blood glucose 99–106
Glycogen phosphorylase
α- and β-adrenergic agents 593–599
cyclic AMP accumulation 593–599
hormonal stimulation 593–599
rat liver glycogen-storage disease 99–106
thyroid status 593–599
Glycogen synthase
adipose tissue 221–228
adipose-tissue phosphoprotein phosphatase 221–228
dephosphorylation and activation 221–228
rat liver glycogen-storage disease 99–106
skeletal muscle 221–228
starvation 221–228
Glycogen-storage disease
mutant rats 99–106
rat liver phosphorylase kinase deficiency 99–106
Glycolysis
pentose phosphate cycle 847–857
Glycolytic intermediates
small-scale assay 799–805
Glycoproteins
epididymis 667–676
Glycosaminoglycans
biosynthesis in articular cartilage 119–130
chain initiation 119–130
chain size 119–130
chondroitin sulphate linkage region 119–130
regenerating liver 769–773
sulphated 769–773
Glycosidases
specific inhibitors in living fibroblasts 337–343
Glycosylmethyl-*p*-nitrophenyltriazenes
inhibition of lysosomal glycosidases 337–343
Golgi membrane vesicles
galactosyltransferase 503–507
glucose and *N*-acylglucosamines 503–507
lactating mammary gland 503–507
Gramicidin
mitochondrial H_2O_2 production 31–37
'Green pigment'
abnormal porphyrin 145–152
2-allyl-2-isopropylacetamide and ferric citrate 289–295
liver haem metabolism 289–295
protohaem ferro-lyase inhibitor 145–152
Growth
copper and iron deficiency 633–641
kidney 229–235
ribosomes 229–235
sulphated glycosaminoglycans 769–773
Growth hormone, *see* Somatotropin
Guanosine triphosphate
adenylate cyclase 393–400, 401–407
hepatocyte purine catabolism 913–920

Haem
2-allyl-2-isopropylacetamide 289–295
experimental porphyria 781–788
ferric citrate 289–295
'green pigments' 289–295
green porphyrin protohaem ferro-lyase inhibitor 145–152
liver metabolism 289–295
mitochondrial transport 459–465
Haem biosynthesis
mitochondrial protoporphyrin-IX uptake 329–335
Haem oxygenase
Ferric citrate and liver haem metabolism 289–295
Haemin
2-allyl-2-isopropylacetamide 781–788
δ-aminolaevulinate synthase induction 781–788
mitochondrial metalloporphyrin efflux 459–465
Haemoglobin
met-, *see* Methaemoglobin
Heart
adrenaline, Ca^{2+} and myosin light-chain phosphorylation 763–768
fractionation of ventricular nuclei 363–373
glutathione content in aging mouse 25–30
hypertrophy and RNA synthesis 67–73
mitochondrial pyruvate dehydrogenase 409–421
nuclear RNA synthesis 67–73
phosphate transport 297–311
purification of myosin light chains 763–768
submitochondrial-particle ATPase 807–815
Heparan sulphate
regenerating liver 769–773
Hepatectomy (partial)
folates and regeneration 553–556
Hepatocytes, *see* Liver cells
Heterogeneous nuclear ribonucleic acid
compartmentation of uridine nucleotides in biosynthesis 85–90
Hexosamine
sialic acid in regenerating liver 905–911
Hexose 6-phosphates
isotopic equilibration and pentose phosphate cycle 859–865
Hindlimb
glutamine release in acidosis 557–560
Histamine secretion
ATP^{4-} and mast cells 789–798
Hormone stimulus
cyclic AMP transmitting system 169–174
Hormones
adenylate cyclase stimulation 169–174
neurohypophysial, *see* Neurohypophysial hormones
Hydrogen ions, *see* Protons

Hydrogen peroxide
formation in antimycin-supplemented mitochondria 31–37
enhancement of formation by protophores and ionophores 31–37
glutathione peroxidase–glutathione reductase system 643–648
Trypanosoma cruzi 643–648
Hydrogenase
energy-conserving oxidation of molecular H_2 345–350
Escherichia coli membrane-bound 345–350
proton translocation 345–350
Hydroperoxide
cytochrome *c* chemiluminescence 577–583
lipid vesicles 577–583
3-Hydroxybutyrate
adipocyte lipolytic response to glucagon 757–761
brain lipogenesis 163–168
Hydroxylysine
glycosylation in cartilage collagen 823–837
3-Hydroxypyridine
maintenance of cytochrome *P*-450 in hepatocytes 937–939
3-Hydroxy-4-trimethylammoniobutyrate, *see* Carnitine
3-Hydroxy-N^6-trimethyl-lysine
carnitine biosynthesis 509–519, 529–534
molecular structure 521–527
nuclear magnetic resonance 521–527
N^6-trimethyl-lysine hydroxylase 529–534
N^6-trimethyl-lysine metabolism 509–519, 521–527, 529–534
Hydroxyurea
ornithine decarboxylase induction 375–380
Hypertension
spontaneous, *see* Spontaneous hypertension
Hypolipidaemic drugs
peroxisome-proliferation-associated polypeptide 731–740
Hypophysectomy
age and RNA-synthesis initiation 55–60

Immunoglobulin G
binding to brush-border membranes 9–16
Immunoglobulin-G Fc fragment
binding to brush-border membranes 9–16
Immunoglobulin-G Fc-fragment receptor
small-intestinal brush-border membrane 9–16
Insulin
action and binding in hepatocytes 839–845
adipose-tissue protein synthesis 185–192, 193–199
lipid and protein synthesis in tumour cells 437–441
lipoprotein lipase 185–192, 193–199
receptors in hepatocytes 839–845
starvation, diabetes and spontaneous obesity 839–845
Intestinal microflora
4-ethynylbiphenyl metabolism 867–872
Intestine
brush-border cell metabolism 619–632
epithelial cell differentiation 609–618
nucleic acid synthesis 609–618
small, *see* Small intestine

Ionophore A23187
erythrocyte budding 881–887
Ionophores
mitochondrial H_2O_2 production 31–37
Iron
liver haem metabolism 289–295
Iron deficiency
protein synthesis and energy metabolism 633–641
secondary to copper deficiency 633–641
γ-Irradiation
DNA damage 677–682
Islets of Langerhans, *see* Pancreatic islets
Isonicotinamide (pyridine-4-carboxylic acid amide)
maintenance of cytochrome *P*-450 in hepatocytes 937–939

Jejunum
brush-border cell metabolism 619–632
differentiation and nucleic acid synthesis 609–618

Ketogenesis
mitochondrial regulation 451–458
Ketone bodies
brain lipogenesis 163–168
metabolism in intestinal brush-border cells 619–632
Kidney
carnitine biosynthesis 509–519, 529–534
controlled nephrectomy and compensatory growth 229–235
gluconeogenesis 741–748
glutamine metabolism 741–748
glutamine uptake in acidosis 557–560
glutathione content in aging mouse 25–30
protein synthesis 229–235
pyruvate and lactate formation 741–748
ribosomes 229–235
N^6-trimethyl-lysine hydroxylase 529–534
N^6-trimethyl-lysine metabolism 509–519, 529–534
vitamin A and glutathione *S*-transferases 889–893
Kidney cortex
brush-border and basal-lateral membranes 649–656
parathyrin 649–656
Kidney-cortex tubules
glutamate metabolism 873–880

Lactate
formation in kidney 741–748
pentose phosphate cycle 847–857, 859–865
production by intestinal cells 619–632
Lactation
dietary regulation of mammary lipogenesis 61–65
Lactogenesis
γ-glutamyl peptidase and prolactin 565–568
Lactose
transport in *Escherichia coli* 459–465
Lectin
developing lung 1–8
β-galactoside-binding protein 1–8
lymphocyte transformation and polyamines 263–267
Leucine
membrane transport 541–548
Leucine dehydrogenase
determination of branched-chain amino acids and 2-oxo acids 705–713

purification from *Bacillus subtilis* 705–713
Light-emission, *see* Chemiluminescence
Lipid peroxidation
carbon disulphide and cytochrome *P*-450 107–112
Lipid vesicles
cytochrome *c* chemiluminescence 577–583
phospholipid fatty acids 577–583
Lipids
biosynthesis in spinach leaves 17–24
neutral, *see* Neutral lipids
synthesis in ciliary membranes 695–704
vasopressin and acetate incorporation 437–441
Lipogenesis
dietary regulation 61–65
lactating rat mammary gland 61–65
suckling-rat brain 163–168
Lipolysis
adipocytes 749–755
glucagon and adenosine deaminase 749–755
Lipoprotein lipase
adrenaline 185–192
epididymal adipose tissue 185–192, 193–199
glucocorticoids 185–192
glucose 193–199
insulin 185–192, 193–199
protein synthesis 185–192, 193–199
Liver
adenylate cyclase and proteinase inhibitors 423–435
branched-chain 2-oxo acids 705–713
carnitine biosynthesis 509–519
diabetes and pyruvate carboxylase and pyruvate dehydrogenase 601–608
dietary regulation of lipogenesis 61–65
4-ethynylbiphenyl metabolism 867–872
glutathione content in aging mouse 25–30
glycogen phosphorylase and glycogen synthase 99–106
glycogen-storage disease in rats 99–106
haem metabolism 289–295
hypolipidaemic drugs 731–740
luciferase assay of metabolites and NADH 799–805
mitochondrial Ca^{2+} 749–755
mitochondrial deterioration 817–822
pentose phosphate cycle 847–857, 859–865
peroxisome-proliferation-associated polypeptide 731–740
phosphorylase kinase 99–106
N^6-trimethyl-lysine metabolism 509–519
vitamin A and glutathione *S*-transferases 889–893
α- and β-adrenergic agents 593–599
α-aminoisobutyrate uptake 839–845
bile salts 321–327
coformycin and purine catabolism 913–920
cytosine arabinoside and bromodeoxyuridine 929–932
cytosol factor stimulating adenylate cyclase 393–400
differentiation and mitosis in foetus 929–932
digitonin fractionation 207–212
ethanol-induced glutathione depletion 549–552
experimental porphyria 781–788
glycogen phosphorylase and cyclic AMP 593–599
insulin action and binding 839–845
low-temperature fractionation method 207–212
maintenance of cytochrome *P*-450 in culture 937–939
metabolite compartmentation 207–212
pentose phosphate cycle 847–857, 859–865
plasma-membrane enzymes 321–327
starved, diabetic and spontaneously obese rats 839–845
thyroid status 593–599
tyrosine aminotransferase inducibility 929–932
Liver parenchymal cells
cadmium uptake 285–288
metallothionein synthesis 285–288
regulation of CoA biosynthesis 175–184
Liver regeneration
folates 553–556
glycosaminoglycans 769–773
sialic acid metabolism 905–911
Luciferase
bacterial 799–805
determination of metabolites and NADH 799–805
Lung
acetylcholinesterase 1–8
elastin 1–8
lectin (β-galactoside-binding protein) 1–8
perfusion *in situ* 269–278
phenylalanine compartmentalization 269–278
postnatal development 1–8
protein synthesis 269–278
vitamin A and glutathione *S*-transferases 889–893
Lutropin (lutenizing hormone)
embryonic-ovary ornithine decarboxylase 313–319
Lymphocytes
lectin (phytohaemagglutinin) stimulation 263–267
polyamines 263–267
Lymphoid cells
ataxia telangiectasia 677–682
DNA-repair enzymes 677–682
Lysosomal enzymes
amine-induced release from macrophages 933–936
Lysosomes
chymostatin inhibition 213–220
glycosidase inactivation by glycosylmethyl-*p*-nitrophenyltriazines 337–343
human cultured fibroblasts 337–343
protein catabolism 895–903

Macrophages
amine-induced lysosomal-enzyme release 933–936
Magnesium ions
ADP inhibition of ATPase 807–815
Malate
mitochondrial pent-4-enoate metabolism 725–729
subcellular distribution in hepatocytes 207–212
'Malic' enzyme
kidney 741–748
Mammary gland
dietary regulation of lipogenesis 61–65
galactosyltransferase 503–507
γ-glutamyl transpeptidase 565–568
Golgi membrane vesicles 503–507
Mammary tumour
neurohypophysial-hormone-responsive cells 437–441

Mannolipid
brain development 481–490
dolichyl monophosphate 481–490
Mast cells
ATP^{4-} receptor 789–798
histamine secretion 789–798
phosphatidylinositol labelling 789–798
Medium-chain fatty acids
rat milk and diet 61–65
Membrane potential
acetoacetate-induced Ca^{2+} efflux 113–118
rat liver mitochondria 113–118
Membrane proteins
milk-fat globule 925–928
monoclonal antibodies 925–928
phosphorylation in neurosecretosomes 657–666
Membrane vesicles
energized Ca^{2+} accumulation 47–54
Membrane-lipid fluidity
control of fatty acyl chain length 585–592
Membranes
adenylate cyclase in liver and ovary 423–435
amino acid carrier 541–548
basal-lateral, *see* Basal-lateral membrane
brain white matter 481–490
brush-border, *see* Brush-border membrane
cilia of *Tetrahymena thermophila* 695–704
Erwinia carotovora inner and outer 131–135
erythrocyte, *see* Erythrocyte membranes
erythrocytes and vesicles 881–887
fluidity and structure in bacteria 131–135
Golgi, *see* Golgi membrane
Gram-negative bacteria 131–135
hydrogenase of *Escherichia coli* 345–350
lipid-vesicle model system 577–583
microsomal, *see* Microsomal membranes
mitochondrial, *see* Mitochondrial membrane
mitochondrial deterioration 817–822
nerve cell body 153–161
neurosecretosomal, *see* Neurosecretosomal membrane
phosphatidylethanolamine 131–135
phospholipids 153–161
photosynthetic electon transport in *Phormidium* 351–361
plasma, *see* Plasma membrane
protein and phospholipid turnover 695–704
3-Mercaptopicolinate
kidney metabolism 741–748
Mersalyl
heart phosphate transport 297–311
Metabolite compartmentation
digitonin fractionation of hepatocytes 207–212
Metalloporphyrins
mitochondrial efflux 459–465
Metallothionein
cadmium 285–288
liver parenchymal cells 285–288
Methaemoglobin
reduction in erythrocytes 535–540
Methionine
hepatocyte glutathione 549–552
Methylamine
lysosomal-enzyme release from macrophages 933–936
1,1′-[(Methylethanediylidene)dinitrilo]bis-(3-aminoguanidine) ('MBAG')
S-adenosylmethionine decarboxylase 491–501
cell growth inhibition 491–501
polyamines 491–501
1,1′-[(Methylethanediylidene)dinitrilo]diguanidine ('MGBG')
S-adenosylmethionine decarboxylase 491–501
cell growth inhibition 491–501
polyamines 491–501
Methylglyoxal bis(guanylhydrazone), *see* 1,1′-[(Methylethanediylidene)dinitrilo]diguanidine
Metyrapone
maintenance of cytochrome *P*-450 in hepatocytes 937–939
Micrococcus cryophilus
fatty acid biosynthesis and elongation 585–592
phospholipid fatty acids 585–592
Microsomal fraction
carbon disulphide 107–112
cytochrome *P*-450 107–112
4-ethynylbiphenyl metabolism 867–872
mixed-function oxidases 107–112
polar-lipid synthesis 17–24
spinach leaves 17–24
Microsomal membranes
ATPases, 5′-nucleotidase and cholesterol 569–572
skeletal muscle 569–572
Microvesicles
erythrocyte budding 881–887
Milk lipids
diet and fatty acid composition 61–65
Milk-fat globules
membrane proteins 925–928
Mitochondria
acetoacetate 113–118
adenine nucleotides 817–822
α-adrenergic agonists and glucagon 443–450
ATP synthesis and protonmotive force 945–948
ATPase 817–822
Ca^{2+} efflux 113–118
Ca^{2+} fluxes 443–450
carnitine and palmitoylcarnitine 451–458
copper and iron deficiency 633–641
deterioration on aging 817–822
diabetes and pyruvate carboxylase and pyruvate dehydrogenase 601–608
digitonin fractionation of hepatocytes 207–212
H_2O_2 production 31–37
kidney N^6-trimethyl-lysine hydroxylase 529–534
membrane carbon transfer 163–168
metabolite contents 207–212
metalloporphyrin efflux 459–465
Nupercaine and Ca^{2+} 749–755
oxidation of endogenous nicotinamide nucleotides 113–118
oxidative phosphorylation 817–822
pent-4-enoate metabolism 725–729
protophores and ionophores 31–37
protoporphyrin-IX uptake 329–335
pyruvate dehydrogenase complex phosphorylation 409–421
rat heart 409–421
Ruthenium Red-stimulated Ca^{2+} efflux 749–755

see also Submitochondrial particles
Mitochondrial membrane
citrate and *N*-acetylaspartate transport 163–168
Mitosis
foetal hepatocytes 929–932
Mixed-function oxidases
carbon disulphide 107–112
rat liver microsomal fraction 107–112
Mucopolysaccharides, *see* Glycosaminoglycans
Muscle
cardiac, *see* Cardiac muscle
exercise and protein turnover 255–262
proteinases 255–262
skeletal, *see* Skeletal muscle
Muscular dystrophy
possible use of chymostatin 213–220
protein degradation 213–220
Myelination
brain development 481–490
dolichyl phosphate mannose synthase 481–490
Myocardial cells
fractionation of ventricular nuclei 363–373
Myocardium
nuclear RNA synthesis 67–73
Myosin light chains
phosphorylation, adrenaline and Ca^{2+} 763–768
purification from rat heart 763–768

'Nanovesicles'
erythrocyte budding 881–887
Nerve cell body
membrane phospholipids 153–161
subcellular fractionation 153–161
Nerve endings
membrane phosphorylation 657–666
pituitary gland 657–666
Neural lobes
neurosecretosomal-membrane phosphorylation 657–666
Neurohypophysial hormones
responsive tumour cells 437–441
Neurohypophysis
membrane phosphorylation 657–666
neurosecretosome (nerve-ending) membranes 657–666
Neurons
nerve-cell-body phospholipids 153–161
Neurosecretosomal membrane
membrane protein phosphorylation 657–666
pituitary gland 657–666
Neurospora crassa
alternative oxidase 141–144
mitochondria 141–144
nucleoside phosphates 141–144
succinate oxidase 141–144
Neutral lipids
nerve cell bodies 153–161
Nicotinamide nucleotides
acetoacetate-induced oxidation 113–118
mitochondrial Ca^{2+} efflux 113–118
oxidation in mitochondria 113–118
Nicotinamide–adenine dinucleotide (reduced)
determination with bacterial luciferase 799–805
Nitrate reductase
Escherichia coli 345–350
Non-histone chromatin proteins
myocardial-cell nuclei 363–373
Nuclear magnetic resonance spectroscopy
3-hydroxy-N^6-trimethyl-lysine 521–527
N^6-trimethyl-lysine 521–527
Nucleic acids
synthesis and intestinal-epithelial-cell differentiation 609–618
Nucleolus
gene regulation 381–385
liver RNA synthesis 381–385
Nucleoside monophosphates
alternative-oxidase-mediated succinate oxidase 141–144
Neurospora crassa mitochondria 141–144
Nucleoside triphosphatase
inhibition in nuclear envelopes 91–97
Nucleoside triphosphase inhibitors
RNA release from nuclei 91–97
5′-Nucleotidase
liver cytosolic 913–920
membrane release by bile salts 321–327
skeletal-muscle microsomal 569–572
Nucleotides
RNA release from nuclei 91–97
Nucleus
heart ventricles 353–363
liver RNA synthesis 381–385
nerve-cell-body phospholipids 153–161
RNA polymerases and hypertension 67–73
RNA synthesis initiation 55–60
stability and RNA release 91–97
Nupercaine (cinchocaine hydrochloride)
mitochondrial Ca^{2+} efflux 749–755

Obesity (spontaneous)
hepatocyte insulin action and binding 839–845
Oestradiol
embryonic-ovary ornithine decarboxylase 313–319
uterine polyribosomes and poly(A)-containing RNA 689–694
Oestrogen
embryonic-ovary ornithine decarboxylase 313–319
uterine polyribosomes and poly(A)-containing RNA 689–694
Oleate
nerve-cell-body lipids 153–161
Ornithine decarboxylase
developing chick ovary 313–319
DNA synthesis 375–380
hormonal effects 313–319
hydroxyurea and thiourea 375–380
induction in proliferating and dividing cells 375–380
polyamine metabolism 385–392
Orotate
incorporation into uridine nucleotides and RNA 75–83, 85–90
Osteoarthrosis
cartilage matrix-protein biosynthesis 823–837
collagen biosynthesis in articular cartilage 823–837

Osteogenic-sarcoma cells
cytosol factor stimulating adenylate cyclase 393–400, 401–407
Ovariectomy
uterine polyribosomes and poly(A)-containing RNA 689–694
Ovary
adenylate cyclase and proteinase inhibitors 423–435
development in chick 313–319
ornithine decarboxylase and hormones 313–319
Oxaloacetate decarboxylase
kidney 741–748
Oxidases
mixed-function, *see* Mixed-function oxidases
Oxidative phosphorylation
mitochondrial ATP synthesis and protonmotive force 945–948
mitochondrial deterioration 817–822
2-Oxo acids
branched-chain, *see* Branched-chain 2-oxo acids
2-Oxoglutarate
kidney metabolism 741–748
Oxygen evolution
heat- and detergent-stability in thermophilic blue–green alga 351–361
membrane preparation from *Phormidium* 351–361
Oxygen (singlet)
cytochrome *c* chemiluminescence 577–583
Oxytocin
lipid and protein synthesis in tumour cells 437–441

Palmitate
nerve-cell-body lipids 153–161
Palmitoylcarnitine
mitochondrial oxidation 451–458
Pancreas
carcinoma 921–924
secretion granules 921–924
Pancreatic A_2-cells
alloxan 201–206
glucagon release 201–206
glucose oxidation 201–206
Pancreatic islets
A_2-cells 201–206
alloxan 201–206
glucagon release 201–206
glucose oxidation 201–206
Pantothenate
regulation of conversion into CoA 175–184
Parathyrin (parathyroid hormone)
binding to kidney-cortex plasma membranes 649–656
fragmentation by kidney-cortex plasma membranes 649–656
membrane adenylate cyclase 649–656
Pentachlorophenol
mitochondrial H_2O_2 production 31–37
Pentanoate
mitochondrial metabolism 725–729
Pent-4-enoate
mitochondrial metabolism 725–729
Pentose phosphate cycle
liver 847–857, 859–865
Pentose 5-phosphates
formation in glucose metabolism 847–857, 859–865
Peptide-chain initiation
copper and iron deficiency 633–641
Peroxidase
H_2O_2 metabolism in *Trypanosoma cruzi* 643–648
Peroxisome-proliferation-associated polypeptide ('PPA-80')
hypolipidaemic drugs 731–740
immunoreactivity 731–740
partial purification from liver 731–740
Peroxisomes
peroxisome-proliferation-associated polypeptide 731–740
Phenoxybenzamine
mitochondrial Ca^{2+} fluxes 443–450
Phenylalanine
compartmentalization in lung 269–278
protein synthesis 269–278
Phenylephrine
mitochondrial Ca^{2+} fluxes 443–450
Phlorrhizin
galactosyltransferase 503–507
Golgi membrane vesicles 503–507
Phormidium laminosum, *see* Thermophilic blue–green alga
Phosphatase
alkaline, see Alkaline phosphatase
Phosphate
incorporation into mitochondrial pyruvate dehydrogenase 409–421
Phosphate transport
cardiac work load 297–311
link with potassium transport in *Escherichia coli* 715–723
Na^+ effects in heart 297–311
perfused rat heart 297–311
symport with protons 715–723
Phosphatidylcholine
biosynthesis in spinach 17–24
cytochrome *c* chemiluminescence 577–583
Phosphatidylethanolamine
Erwinia carotovora 131–135
membrane distribution and fluidity 131–135
Phosphatidylglycerol
biosynthesis in spinach 17–24
Phosphatidylinositol
ATP^{4-} and labelling in mast cells 789–798
Phosphocreatine
cut or stretched skeletal muscle 247–254
Phosphodiesterase
alkaline, *see* Alkaline phosphodiesterase
Phosphoenolpyruvate carboxykinase
kidney 741–748
Phospholipase C
Bacillus cereus 39–46
erythrocyte lysis 39–46
Phospholipids
cytochrome *c* chemiluminescence 577–583
degradation during erythrocyte lysis 39–46
erythrocyte membranes and vesicles 881–887
fatty acyl chains in *Micrococcus cryophilus* 585–592
nerve-cell-body membranes 153–161
radioactive fatty acids 153–161

synthesis in ciliary membranes 695–704
Tetrahymena thermophila 695–704
Phosphoprotein phosphatase
adipose tissue 221–228
glycogen synthase dephosphorylation and activation 221–228
starvation 221–228
Phosphoproteins
pituitary-gland neurosecretosomal membranes 657–666
Phosphorylase kinase
glycogen-storage disease 99–106
rat liver 99–106
Phosphorylation
heart myosin light chains 763–768
mitochondrial pyruvate dehydrogenase complex 409–421
neural-lobe membranes 657–666
oxidative, *see* Oxidative phosphorylation
pyruvate decarboxylase α-chains 409–421
Photosynthesis
electron transport in *Phormidium* 351–361
Phytohaemagglutinin
lymphocyte transformation and polyamines 263–267
Pinocytosis
weak bases and protein degradation 895–903
Pituitary gland
neurosecretosomal-membrane phosphorylation 657–666
Plasma membranes
adenylate cyclase 137–140
enzyme release by bile salts 321–327
fluoride ions 137–140
kidney cortex 649–656
parathyrin binding and fragmentation 649–656
parathyrin-stimulated adenylate cyclase 649–656
Platelets
cytosol factor stimulating adenylate cyclase 393–400, 401–407
Polar lipids
hormone-induced synthesis in mammary tumour 437–441
Polyadenylated ribonucleic acid
oestradiol-17β 689–694
rat uterine polyribosomes 689–694
synthesis and intestinal-epithelial-cell differentiation 609–618
Polyamines
asparagine and γ-aminobutyrate 387–392
diguanidine inhibitors of cell growth 491–501
Ehrlich ascites cells 491–501
embryonic-chick ovary 313–319
lymphocytes 263–267
metabolism in glioma cells 387–392
Polypeptide
peroxisome-proliferation-associated, *see* Peroxisome-proliferation-associated polypeptide
Polypeptide
erythrocyte membranes and vesicles 881–887
Polyribosomes
oestradiol-17β 689–694
poly(A)-containing RNA 689–694
protein synthesis in *Xenopus* oocytes 689–694
rat uterus 689–694
Polysomes, *see* Polyribosomes
Porphyria
experimental, *see* Experimental porphyria
Porphyrin
3,5-diethoxycarbonyl-1,4-dihydrocollidine 145–152
green modified protohaem ferro-lyase inhibitor 145–152
metallo-, *see* Metalloporphyrins
Porphyrin biosynthesis
protoporphyrin IX and mitochondria 329–335
Porphyrin toxicity
liver mitochondria 329–335
Postnatal development
lung 1–8
Potassium ions
mitochondrial protoporphyrin-IX uptake 329–335
Potassium transport
link with phosphate transport in *Escherichia coli* 715–723
Precursor ribosomal ribonucleic acid
compartmentation of uridine nucleotides in biosynthesis 85–90
Primary amines
lysosomal-enzyme release from macrophages 933–936
Progesterone
steroids and receptor binding 237–245
Prolactin
mammary γ-glutamyl transpeptidase 565–568
Proline
cartilage collagen biosynthesis 823–837
Propionate
mitochondrial metabolism 725–729
Prostaglandin E_1
adenylate cyclase stimulation 393–400, 401–407
cyclic AMP in fibroblasts 169–174
Protein
cytosolic adenylate cyclase stimulated 401–407
Protein degradation
aberrant in reticulocytes 279–283
cell aging 279–283
chymostatin 213–220
cut or stretched skeletal muscle 247–254
endogenous and exogenous 895–903
muscle 213–220
muscle of exercising rats 255–262
proteinase inhibitors 213–220
rat yolk sacs 895–903
weak bases 895–903
Protein synthesis
adipose-tissue lipoprotein lipase 185–192, 193–199
androgens and testicular fluid 667–676
articular-cartilage matrix 823–837
cilia of *Tetrahymena thermophila* 695–704
compensatory kidney hypertrophy 229–235
copper and iron deficiency 633–641
cut or stretched skeletal muscles 247–254
experimental osteoarthrosis 823–837
glucose and insulin 193–199
hormonal regulation in epididymis 667–676
inhibition by ricin 941–944
muscle of exercising rats 255–262

Protein synthesis—*cont.*
oestradiol-17β 689–694
rat lung perfused *in situ* 269–278
ribosomal proteins 229–235
uterine polyribosomes 689–694
vasopressin and oxytocin 437–441
Protein turnover
cilia of *Tetrahymena thermophila* 695–704
Proteinase inhibitors
adenylate cyclase 423–435
muscle protein breakdown 213–220
Proteinases
alkaline 213–220, 255–262
Ca^{2+}-activated 213–220, 255–262
Proteins
cilia of *Tetrahymena thermophila* 695–704
epididymis 667–676
milk-fat-globule membrane 925–928
non-histone chromatin, *see* Non-histone chromatin proteins
phosphorylation in neurosecretosomal membranes 657–666
secretory, *see* Secretory proteins
Proteoglycans
articular cartilage 823–837
biosynthesis in articular cartilage 119–130
Proteolysis, *see* Protein degradation
Protohaem ferro-lyase
experimental porphyria 145–152
green modified porphyrin inhibitor 145–152
mitochondrial protoporphyrin-IX uptake 329–335
Proton transport
β-galactoside permease in *Escherichia coli* 467–473
H_2-driven in *Escherichia coli* 345–350
K^+ and phosphate transport in *Escherichia coli* 715–723
Protonmotive force
α-adrenergic agonists 443–450
mitochondrial ATP synthesis 945–948
Protophores
mitochondrial H_2O_2 production 31–37
Protoporphyrin IX
mitochondrial swelling, respiration and damage 329–335
uptake by mitochondria 329–335
Psychrophilic bacteria
membrane fluidity control 585–592
membrane phospholipid acyl-chain length 585–592
Pteroylpolyglutamates
partial hepatectomy 553–556
regenerating liver 553–556
Purine nucleotides
coformycin and hepatocyte metabolism 913–920
Puromycinyl-peptides
proteolysis in reticulocytes 279–283
Putrescine
N-acetylputrescine and N^1-acetylspermidine 263–267
asparagine effects on metabolism 385–392
diguanidine inhibitors of cell growth 491–501
lymphocytes 263–267
Pyridines
maintenance of cytochrome *P*-450 in hepatocytes 937–939
Pyrimidine nucleotide pool
Ehrlich ascites-tumour cells 75–83, 85–90
Pyruvate
brain lipogenesis 163–168
formation in kidney 741–748
gluconeogenesis in diabetes 601–608
pyruvate dehydrogenase-complex activity 409–421
Pyruvate carboxylase
diabetes and turnover in liver 601–608
Pyruvate decarboxylase
α-chain phosphorylation 409–421
heart mitochondrial pyruvate dehydrogenase complex 409–421
Pyruvate dehydrogenase
diabetes and turnover in liver 601–608
Pyruvate dehydrogenase complex
pyruvate decarboxylase α-chain phosphorylation 409–421
rat heart mitochondria 409–421

Rat intestinal cells
metabolism 619–632
Receptor
ATP^{4-} 789–798
glucocorticoid, *see* Glucocorticoid receptors
immunoglobulin-G Fc-fragment, *see* Immunoglobulin-G Fc-fragment receptor
Respiration
cyanide-insensitive 141–144
isolated intestinal cells 619–632
Reticulocytes
aberrant protein degradation 279–283
aging 279–283
Ribonucleic acid
heterogeneous nuclear, *see* Heterogeneous nuclear ribonucleic acid
poly(A)-containing, *see* Polyadenylated ribonucleic acid
release from nuclei 91–97
ribosomal, *see* Ribosomal ribonucleic acid
ribosomal, precursor, *see* Precursor ribosomal ribonucleic acid
transfer, *see* Transfer ribonucleic acid
turnover in Ehrlich ascites-tumour cells 75–83
uridine nucleotide pool 75–83, 85–90
Ribonucleic acid polymerases
cardiac hypertrophy 67–73
heart nuclei 67–73
liver nuclei and nucleoli 381–385
Ribonucleic acid synthesis
age-associated changes in initiation 55–60
Ehrlich ascites-tumour cells 85–90
hypophysectomy and hormone-replacement therapy 55–60
myocardial cells and hypertension 67–73
rat liver nuclei 55–60
Ribonucleotide reductase
Euglena gracilis 573–576
vitamin B_{12} 573–576
Ribosomal proteins
compensatory renal hypertrophy 229–235
ribosome turnover 229–235
synthesis 229–235

Ribosomal ribonucleic acid
synthesis and intestinal-epithelial-cell differentiation 609–618
Ribosomes
copper and iron deficiency 633–641
inhibition by ricin 941–944
kidney 229–235
ribosomal proteins 229–235
Ricin
binding to cell surface 941–944
chemical modifications 941–944
protein-synthesis inhibition 941–944
transmembrane transport 941–944
Ruthenium Red
mitochondrial Ca^{2+} efflux 749–755

Secretion
ATP^{4-} and mast cells 789–798
Secretion granules
pancreatic carcinoma 921–924
Secretory proteins
pancreatic carcinoma 921–924
Sedoheptulose bisphosphatase
Ca^{2+}-inhibition in spinach chloroplasts 775–779
Senescence, *see* Aging
Serine proteinases
inhibitors and adenylate cyclase 423–435
Sialic acid
regenerating liver 905–911
Sialoglycoprotein
regenerating liver 905–911
Skeletal muscle
ATP and phosphocreatine 247–254
branched-chain 2-oxo acids 705–713
chymostatin 213–220
cutting and protein turnover 247–254
glutamine release in acidosis 557–560
glycogen synthase 221–228
microsomal membranes 569–572
protein breakdown 213–220
proteinase inhibitors 213–220
stretching and protein turnover 247–254
Small intestine
immunoglobulin-G Fc-fragment receptor 9–16
preparation of brush-border membranes 9–16
Sodium ions
phosphate transport in heart 297–311
Somatotropin (growth hormone)
hypophysectomy, age and RNA-synthesis initiation 55–60
Spermatozoa
epididymal proteins 667–676
Spermidine
asparagine and polyamine metabolism 385–392
Spermine
asparagine and polyamine metabolism 385–392
Speroechinocytes I
effects of phospholipase C 39–46
storage of human blood 39–46
Spinach (*Spinacia oleracea*)
Ca^{2+} and chloroplast fructose bisphosphatase 775–779
Ca^{2+} regulation of chloroplast Calvin cycle 775–779
leaf chloroplasts and microsomal fractions 17–24
lipid biosynthesis in leaves 17–24
Spinacia oleracea, see Spinach
Spontaneous hypertension
rat heart nuclear RNA synthesis 67–73
Starvation
adipocyte lipolysis 757–761
glycogen synthase 221–228
hepatocyte insulin action and binding 839–845
phosphoprotein phosphatase 221–228
Steroids
glucocorticoid–receptor interactions 237–245
Streptozotocin
pancreatic A_2-cells 201–206
see also Diabetes
Stretching
skeletal-muscle protein turnover 247–254
Subcellular fractionation
nerve cell bodies 153–161
Submitochondrial particles
ATP synthesis and protonmotive force 945–948
ATPase interaction with ATP and ADP 807–815
Succinate oxidase
alternative-oxidase-mediated 141–144
mitochondria 141–144
Neurospora crassa 141–144
nucleoside phosphates 141–144
Superoxide dismutase
H_2O_2 metabolism in *Trypanosoma cruzi* 643–648

Taurocholate
release of hepatocyte plasma-membrane enzymes 321–327
Testicular fluid
epididymal protein synthesis 667–676
Testosterone
embryonic-ovary ornithine decarboxylase 313–319
epididymal protein synthesis 667–676
Tetrahymena thermophila
cilia regeneration 695–704
synthesis of proteins and membrane phospholipids 695–704
Thermophilic blue–green alga (*Phormidium laminosum*)
cytochromes 351–361
heat- and detergent-stable O_2 evolution 351–361
photosynthetic electron transport 351–361
Thiol reagents
galactosyltransferase 503–507
Golgi membrane vesicles 503–507
Thiomethyl β-D-galactoside
transport in *Escherichia coli* 459–465
Thiourea
orinithine decarboxylase induction 375–380
Thymus
cytosolic glucocorticoid receptor 237–245
Thyroid status
hepatocyte glycogen phosphorylase and cyclic AMP 593–599
Thyroxine
hypophysectomy, age and RNA-synthesis initiation 55–60
N^{α}-Tosylarginine methyl ester
adenylate cyclase inhibition 423–435

Transaldolase
exchange reactions in pentose phosphate cycle 847–857, 859–865
Transcription
nucleolar RNA polymerase I 381–385
rat heart nuclear RNA polymerases 67–73
Transfer ribonucleic acid
aminoacyl- (phenylalanyl-) in lung 269–278
Transport
α-adrenergic agonists 443–450
calcium ion, *see* Calcium ion transport
glucose, *see* Glucose transport
phosphate, *see* Phosphate transport
potassium, *see* Potassium transport
ricin 941–944
Tricarboxylic acid-cycle intermediates
kidney metabolism 741–748
mitochondrial pent-4-enoate metabolism 725–729
small-scale assay 799–805
Tri-iodothyronine
hypophysectomy, age and RNA-synthesis initiation 55–60
N^6-Trimethyl-lysine
carnitine biosynthesis 509–519, 529–534
3-hydroxy-N^6-trimethyl-lysine 509–519, 521–527, 529–534
metabolism in rat 509–519, 521–527, 529–534
N^6-Trimethyl-lysine hydroxylase
bivalent cations 529–534
carnitine biosynthesis 529–534
kidney 529–534
mitochondria 529–534
2,4,6-Trinitrobenzenesulphonic acid
Erwinia carotovora membranes 131–135
phosphatidylethanolamine 131–135
Triose phosphates
labelling from glucose 847–857, 859–865
pentose phosphate cycle 847–857, 859–865
Trypanosoma cruzi
glutathione peroxidase and glutathione reductase 643–648
H_2O_2 metabolism 643–648
Tumour
mammary, *see* Mammary tumour
monoclonal antibodies 925–928
pancreas 921–924
Tumour cells
ascites, Ehrlich, *see* Ehrlich ascites-tumour cells
Tyrosine aminotransferase
cytosine arabinoside and bromodeoxyuridine 929–932
induction in foetal hepatocytes 929–932

Uridine
incorporation into pyrimidine nucleotides and RNA 75–83, 85–90
Uridine diphosphate *N*-acetylglucosamine 2-epimerase
regenerating liver 905–911
Uridine nucleotide pool
compartmentation, turnover and RNA metabolism 75–83, 85–90
Ehrlich ascites-tumour cells 75–83, 85–90
Urine
N^6-trimethyl-lysine metabolites 509–519
Uterus
ovariectomy and oestradiol treatment 689–694
polyribosomes and poly(A)-containing RNA 689–694

Valinomycin
mitochondrial H_2O_2 production 31–37
Vasopressin
lipid and protein synthesis in tumour cells 437–441
Vesicles
erythrocyte budding 881–887
Villus cells
nucleic acid synthesis 609–618
4-Vinylbiphenyl
4-ethynylbiphenyl metabolism 867–872
Vitamin A deficiency
carcinogen susceptibility 889–893
glutathione *S*-transferases 889–893
Vitamin B_{12}
ribonucleotide reductase in *Euglena gracilis* 573–576

Work load
heart phosphate transport 297–311

Xanthine oxidase
milk-fat-globule membrane 925–928
monoclonal antibody 925–928
Xylosides
glycosaminoglycan biosynthesis 119–130
Xylosyltransferase
cartilage proteoglycan biosynthesis 119–130

Yolk sacs
protein degradation 895–903

Zymogen granules
pancreas and carcinoma 921–924